

# ***Stereo Cassette Deck***

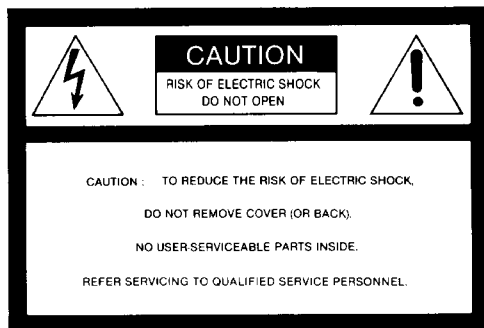
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Operating Instructions

*TC-W306  
TC-W31*

## WARNING

**To prevent fire or shock hazard, do not expose the unit to rain or moisture.**



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

\*The graphical symbols are on the rear enclosure.

### Owner's Record

The model and serial numbers are located at the rear. Record these numbers in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

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## Features

- **Double deck:** deck A for playback and B for recording/playback.
  - **Dolby NR\*** system which reduces tape hiss noise.
  - **Synchronized dubbing** at normal or high (double) speed.
- \* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY", the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

#### Differences between the TC-W31 and TC-W306

This instruction manual covers the TC-W31 and the TC-W306. The differences between them are:

- The TC-W31 has B and C type Dolby NR systems, while the TC-W306 has B type only.
- The TC-W31 has a BALANCE control for recording and the TC-W306 does not.
- Most of the illustrations used in this manual are of the TC-W31.

## Precautions

### On safety

- This unit operates on 120 V AC, 60 Hz only.
- Should anything fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it will not be used for a long time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.

### On installation

- Place the unit on a level surface.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Good ventilation is essential to prevent internal heat build-up in the unit. Place the unit in a location with adequate air circulation. Do not place the unit on a soft surface.

### On operation

- When the unit is not used, turn the power off to conserve energy and to extend the useful life of your unit.
- Because of the safety mechanism, the function buttons will not operate if the cassette holder is not completely closed, if there is no cassette in the cassette holder, or if a cassette has been incorrectly inserted into the cassette holder.

### On head cleaning

The head and tape path should be cleaned after every 10 hours of operation. Dirty heads and a dirty tape path may cause:

- loss of high-frequency response
- loss of sound volume
- sound drop-out

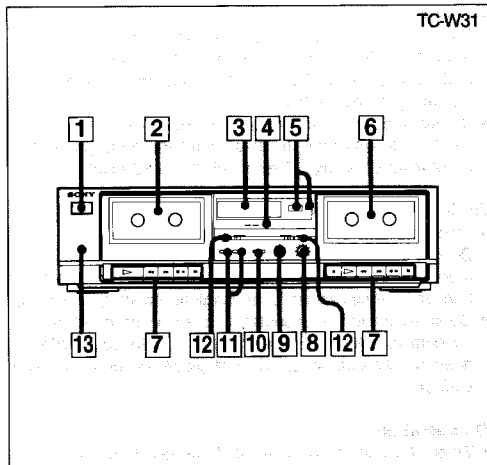
### Note on cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous playback.

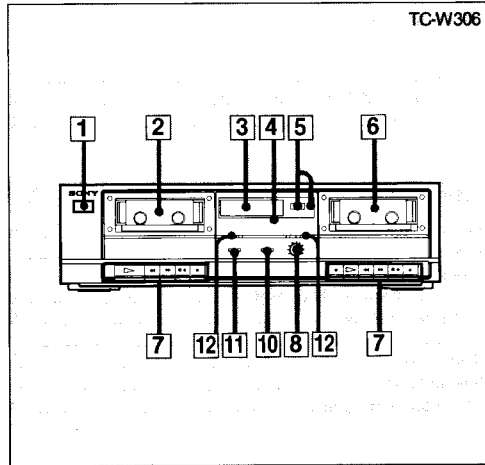
If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS."

# Identification of Front Panel Parts

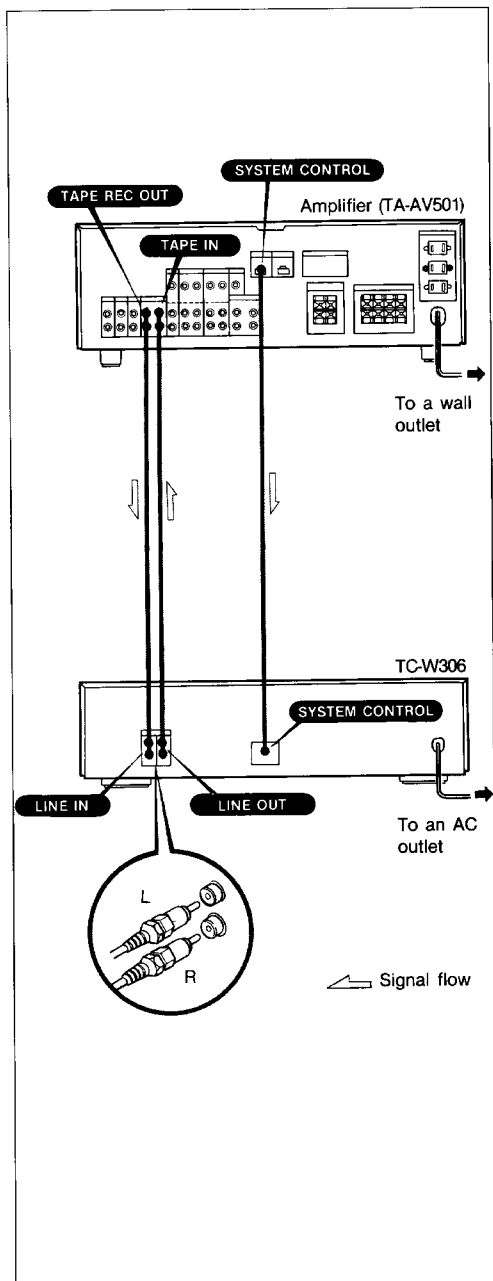


- 1 POWER switch**
- 2 Cassette holder (deck A)**
- 3 PEAK LEVEL METER**
- 4 DUBBING SPEED and RECORD indicators**
- 5 TAPE COUNTER and RESET button**
- 6 Cassette holder (deck B)**
- 7 Tape operation buttons**
  - REC (record) button (deck B only)
  - ▶ (play) button
  - ◀◀ (rewinding) button
  - ▶▶ (fast-forward) button
  - ▲ (stop) and (eject) button
  - || PAUSE button



- 8 REC (recording) LEVEL control 7 9**
- 9 BALANCE control 6**
- 10 DUBBING SPEED button 8**  
HIGH/NORMAL speed button
- 11 DOLBY NR (Dolby noise reduction) buttons 6 7**
- 12 TAPE SELECT switches 6 7 8**
- 13 HEADPHONES jack (stereo phone jack)**

# Connections

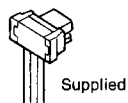


## Notes on connections

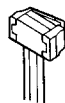
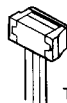
- Turn off the power to all equipment to be connected before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.
- The connecting cords should be fully inserted into the jacks. A loose connection may cause hum pickup.

## System Control Connection (TC-W306 only)

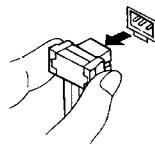
Connect the 3-pin flat connector of the system control cord for remote control into the SYSTEM CONTROL jack of the Sony TA-AV501 amplifier.



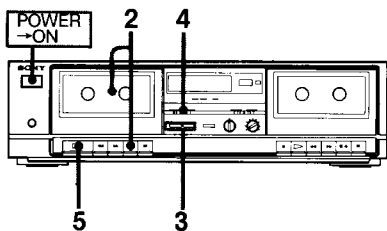
Be sure to seat the connector completely.



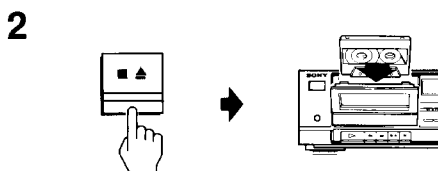
To disconnect the cord, pull out the connector. Do not pull the cord itself.



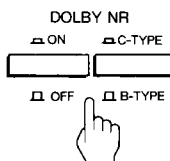
# Playing Back (On Either Deck A or B)



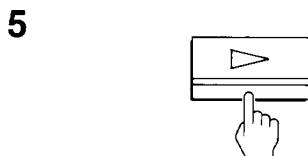
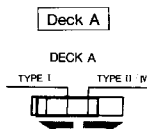
- 1 Turn on the amplifier and select the tape function.



- 3 Select the Dolby NR System.



- 4 Select the tape type.



When the tape ends, the unit will automatically stop.

To stop playback, press ■▲.

To pause, press ■■.

To resume playback, press ■■ again.

## Before turning off the power

Be sure to release ► or ● by pressing ■▲. Otherwise, the tape may become entangled when the power is turned on again.

## After winding the tape using ◀◀ or ▶▶

The unit will not shut off automatically.

Be sure to press ■▲ to release the fast winding button.


## When Decks A and B are in the playback mode

Only playback from Deck A will be audible.

## What is the Dolby NR system?\*

The Dolby NR (noise reduction) system reduces tape hiss noise in low-level high-frequency signals by boosting the signals during recording and lowering them during playback.

\*Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

## Selecting the tape type

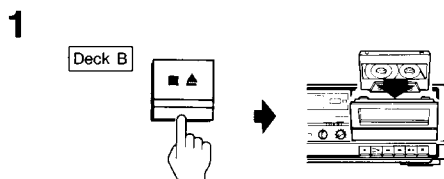
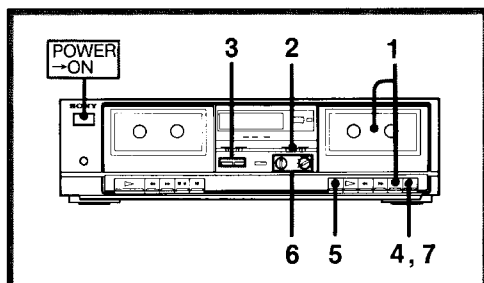
Select the tape type according to the classification of Sony cassette tapes (see "Tape classification").

Tape type	TAPE SELECT setting	
	Deck A	Deck B
TYPE I (NORMAL)	TYPE I	TYPE I
TYPE II (CrO <sub>2</sub> )	TYPE II/IV	TYPE II
TYPE IV (METAL)		TYPE IV

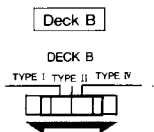
## Tape classification

Tape type	Tapes (C30–C90)
TYPE I (Normal)	SONY: EF, HF, HF-S, HF-ES Other TYPE I equivalent tape (For 120μs EQ, NORMAL BIAS)
TYPE II (CrO <sub>2</sub> )	SONY: UX, UX-S, UX-ES, UX-PRO Other TYPE II equivalent tapes (For 70μs EQ, HIGH BIAS)
TYPE IV (Metal)	SONY: METAL-ES Other TYPE IV equivalent tapes (For 70μs EQ, METAL BIAS)

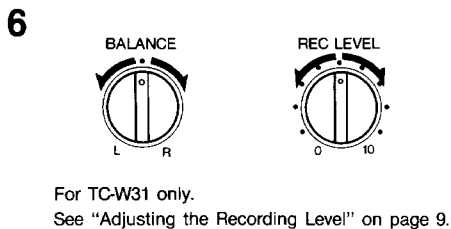
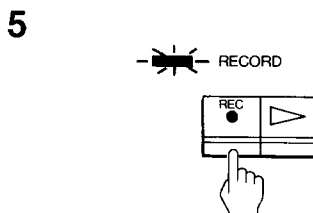
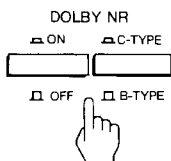
# Recording (on Deck B)



**2** Select the tape type.

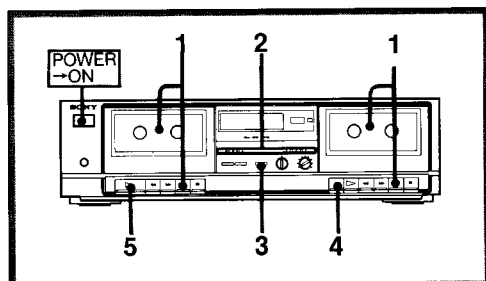


**3** Select the Dolby NR system.

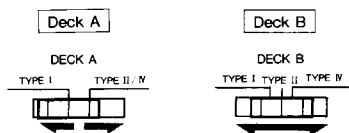


To stop recording, press ■▲.

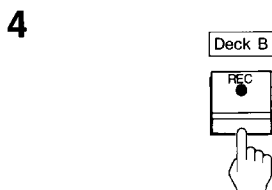
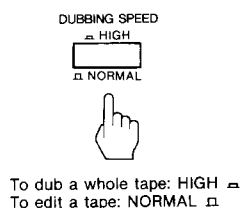
# Dubbing a Tape (from Deck A to B)



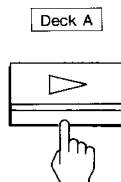
## 2 Select the tape type.



## 3 Select the dubbing speed.



## 5



To stop dubbing, press ■▲ on both decks.

### Is it necessary to select the DOLBY NR system?

No. The cassette in Deck B is automatically recorded with the same recording system as the original cassette in Deck A.

### Notes on tape dubbing

- Do not change the setting of the DUBBING SPEED switch during tape dubbing.
- If the sound is affected by a television set during high-speed dubbing, turn off the set or move it away from the deck.

### How to edit a tape

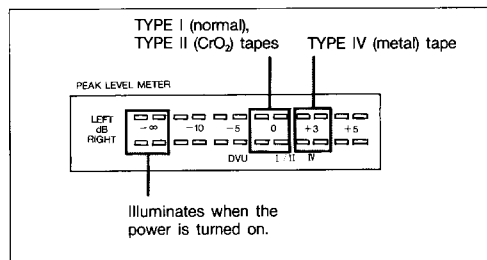
- 1 During normal-speed dubbing, press ■■ on Deck B.
- 2 Locate the desired portion to be dubbed with ►► or ◀◀ on Deck A and press ■▲. Or replace the cassette with a new one.
- 3 Press ► on Deck A and release ■■ on Deck B to start dubbing again.

## Adjusting the Recording Level

The optimum recording level, which differs according to the tape type, is indicated on the Peak Level Meter for each tape type.

Adjust the REC LEVEL control as high as possible without exceeding the recommended range for the tape type being used.

### Recommended maximum PEAK LEVEL METER reading



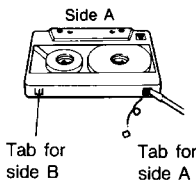
### Tips on recording level adjustment

- Adjust the recording level as high as possible without causing distortion in the recorded sound. If the recording level setting is too high, the recording will be distorted; if it is too low, the tape will produce a hissing sound.
- If the program source to be recorded has many high frequency signals, set the level to a relatively low position.

## Notes on Cassettes

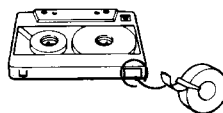
### To protect a recording on side A or B

Break out the respective tab.



### To recover a cassette for recording

Cover the respective slot with tape.

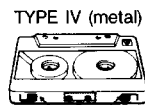


### When using TYPE II (CrO<sub>2</sub>) or TYPE IV (metal) cassettes

Be careful not to cover the detector slots which are necessary for automatic tape type detection.



Detector slots

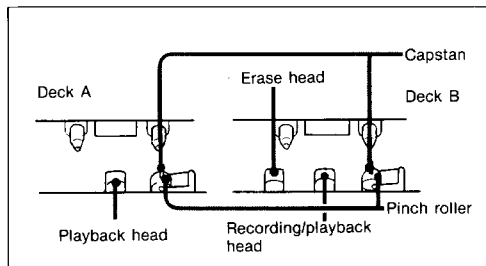


Detector slots

### Cassette care

- Avoid touching the tape surface of a cassette to prevent contamination of the heads by dirt, dust, or oil on the skin.
- Keep cassettes away from equipment with magnets, such as speakers and amplifiers, as erasure or distortion of the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures, or moisture.

## Maintenance



### Cleaning the Heads and Tape Path

Clean after every 10 hours of operation and before recording for optimum recording/playback quality.

- 1 Press .
- 2 Slightly moisten the tip of a cotton swab with cleaning fluid or alcohol.
- 3 Wipe heads, pinch rollers and capstans.

### Demagnetizing the Heads

After 20 to 30 hours of use, it is necessary to remove residual magnetism built up on the head. Turn off the power and demagnetize heads with any commercially available demagnetizer.

### Cleaning the Cabinet

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution.

### Important

Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

## Specifications

### Recording system

4-track 2-channel stereo

### Fast-forward and rewind time

Approx. 120 sec. (with C-60 cassette)

### Bias

AC bias

### Signal-to-noise ratio (NAB, at peak level)

Dolby NR switch Cassette	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	56 dB	63 dB	69 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

(TC-W31 only)

### Total harmonic distortion

1.0% (with Sony METAL-ES cassette)

### Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	30 – 15,000 Hz ( $\pm 3$ dB) 30 – 13,000 Hz (OVU recording)
TYPE II cassette (Sony UX-S)	30 – 14,000 Hz ( $\pm 3$ dB)
TYPE I cassette (Sony HF-S)	30 – 13,000 Hz ( $\pm 3$ dB)

### Wow and flutter 0.12% WRMS (NAB)

### Input

Connector	Type	Sensitivity	Impedance
LINE IN	phono	77.5 mV ( $-20$ dB)	50 k ohms

### Output

Connector	Type	Rated output level	Load impedance
LINE OUT	phono	0.44 V ( $-5$ dB) at load impedance 47 k ohms	over 10 k ohms

### General

#### Power requirements

120 V AC, 60 Hz

#### Power consumption

TC-W31 : 18 W

TC-W306 : 15 W

#### Dimensions

TC-W31 : Approx. 430 × 123 × 280 mm (w/h/d)  
(17 × 4 $\frac{7}{8}$  × 11 $\frac{1}{8}$  inches)

TC-W306 : Approx. 430 × 118 × 250 mm (w/h/d)  
(17 × 4 $\frac{3}{4}$  × 9 $\frac{7}{8}$  inches)

including projecting parts and controls

#### Weight

Approx. 3.4 kg (7 lbs 8 oz)

#### Supplied accessories

Connecting cords (2)

Design and specifications subject to change without notice.

# Troubleshooting Guide

Before going through the check list below, first refer back to the connection and operating procedures. Should any problem persist after you have made these checks, consult your nearest Sony dealer.

Function Buttons and Tape Transport Problems		
Symptom	Cause	Remedy
Function buttons do not activate.	Cassette holder is not fully closed.	Close the holder completely.
● button does not activate.	No cassette in the holder.	Insert a cassette.
	Tab has been removed from the cassette.	Cover the hole with tape.
Automatic shut-off mechanism activates before the tape comes to its end.	Tape is slack.	Take up the tape slack.
	Cassette shell is deformed.	Use another cassette.
Excessively loud tape transport noise during rewinding or fast-forwarding.	The noise is caused by the cassette and does not signify a mechanical problem.	—

Recording and Playback Problems		
Symptom	Cause	Remedy
Recording or playback cannot be made or there is a decrease in sound level.	Recording playback and erase heads are either dirty or magnetized.	Clean or demagnetize the heads.
	Improper connection.	Make connections properly.
	Improper setting of the amplifier controls.	Set the amplifier controls to the appropriate positions.
Excessive wow, flutter or dropout.	Head, capstan or pinch roller is dirty.	Clean in accordance with instructions shown in "Maintenance".
Incomplete erasure.	Erase head is dirty.	Clean the erase head.
Increased noise or poor reproduction in high frequencies.	Head is magnetized.	Demagnetize the head.
Unbalanced tone in high frequencies.	Improper setting of the DOLBY NR switch.	When playing back, set the switch to the same position used in recording.
	Improper setting of the TAPE SELECT switch(es).	If recorded with the wrong switch setting, adjust the tone controls of the amplifier in playback.

Noise		
Symptom	Cause	Remedy
Hum noise	The deck is stacked on or under the amplifier.	Separate the units.
Noise is recorded.	Recording was made near such equipment as a television set or a color monitor, and interference has affected the recording on the tape and the Dolby NR system.	Move the unit away from television set or color monitor.